

# *We Support Today's Fleet Tomorrow's Fleet and the Fleet after*



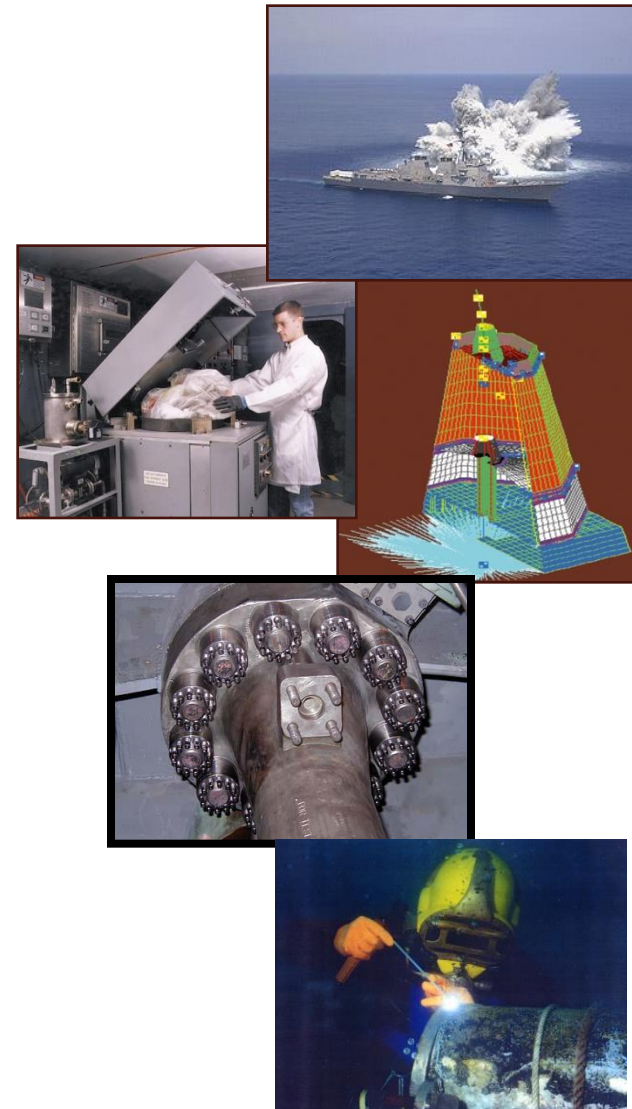
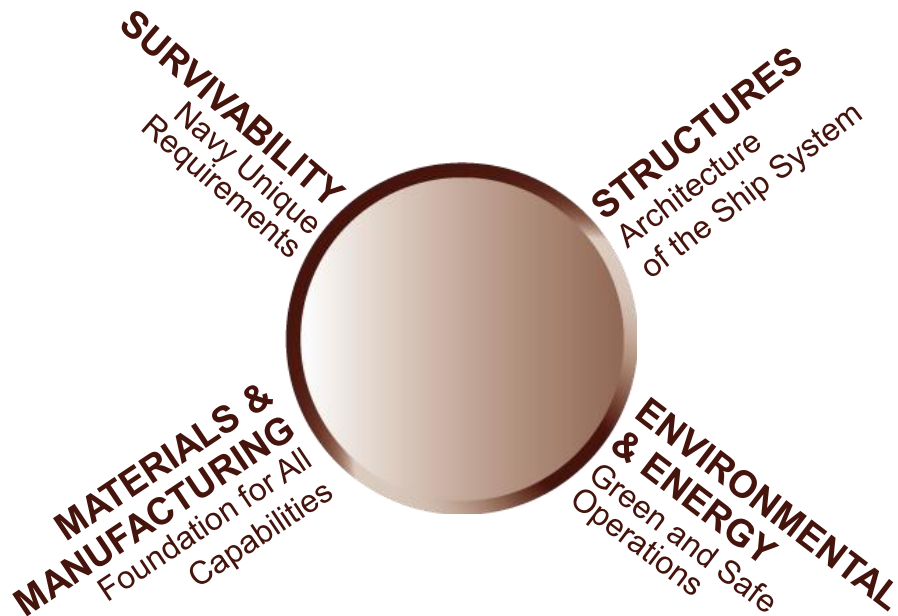
*Department 60  
Naval Surface Warfare Center – Carderock Division*



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## **Mission**

**Provide fundamental enabling technologies for enhanced ship integrity and performance.**  
**Conduct full spectrum research, development, testing, life- cycle management, and in-service engineering in the areas of:**





## *Vision*

We will be the Navy's premier provider in survivability, structures, materials and environmental knowledge enabling the fleet and it's warfighters to perform all missions safely and effectively.

## *Technical Capabilities*

- CD 14: Surface, Undersea and Weapon Vehicle Materials and Manufacturing Technologies
- CD 15: Surface & Undersea Vehicle Structures
- CD 16: Alternative Energy and Power Sources R&D
- CD 17: Liquid Waste Management, Science and Systems
- CD 18: Solid Waste, Hazardous Supply & Radiation Technology Management, Science and Systems
- CD 20: Surface, Undersea and USMC Vehicle Vulnerability Reduction and Protection
- CD 25: Radiation Detection Technology Research and Management

# Materials & Manufacturing Division (Code 61)

- Welding, Processing & NDE
  - Acquisition and ISE support
  - RDT&E on welding, processes, NDE, hull husbandry automation, and AM structures
  - Automated underwater hull surveys
  - Experts in welding consumable design and development
- Additive Manufacturing Project Office
  - Advancing the AM science
  - Navy Center of Knowledge
  - Developing certification processes for parts
  - Coordinating SYSCOM and DoN efforts
- Propulsor Manufacturing Office
  - Navy lead for Virginia Class Propulsor construction
  - Direct the design, development, manufacturing and acquisition of propulsors
- Physical Metallurgy and Fire
  - RDT&E, S&T, and ISE services for naval alloys
  - Metallurgical analyses and characterization
  - Supply failure analyses
  - Magnetostrictive materials
  - Evaluating the fire performance
- Corrosion & Coatings Engineering
  - Experts in R&D, S&T, acquisition, and ISE for naval and expeditionary environments
  - Develop mitigating technologies
  - Experts in biofouling and antifouling agents
- Non-Metallic Mat'ls Research & Eng.
  - RDT&E, S&T, acquisition, and ISE services
  - Experts in high temperature ceramic applic.
  - Experts in polymer processing applic.
  - Fabricator of acoustic absorbing/reflecting tiles



# Environmental and Energy Division (Code 63)

- Radiation Technology, EOSH, Ship Acquisition, and Systems Safety
  - Provide certified principle for safety services for NAVSEA acquisition programs
  - Evaluate environmental and radiation OSH technologies and processes
  - Develop radiation technical standards
  - Identify radiation instruments for testing, evaluating, calibrating and fielding devices
- Wastewater Management
  - Experts on EPA and international policies and requirements
  - RDT&E for ballast, grey and black technologies and processes
  - Support shore facilities and installations
  - Advise acquisition programs on selection of systems
- Solid Waste, Pollution Prevention Afloat, & Hazardous Supply Management
  - RDT&E for implementation of equipment, procedures, and processes of surface and submarine fleet
  - Provide ISE services for submarines
  - Support shore facilities and installations
- Advanced Power & Energy
  - RDT&E, S&T, and acquisition support to NAVSEA programs and USMC
  - Expert on energy storage (batteries) certification and safety
  - Engineering support of portable, hybrid, and fuel cells for forward deployed expeditionary sites



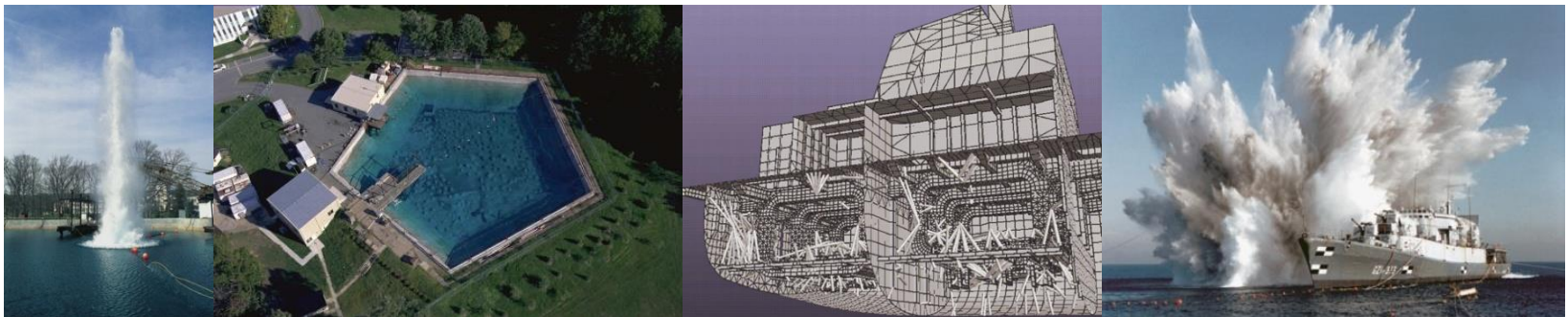
# Structures and Composites Division (Code 65)

- Ship Structures
  - RDT&E, S&T, acquisition, and ISE services
  - Validate contractor designs to standards via FEA
  - Develop design methodologies and software tools for surface ships and composite structures
- Submarine Structures & Propulsors
  - RDT&E, S&T, acquisition, and ISE services
  - Validate contractor designs to standards
  - Develop design methodologies and software tools for pressure hulls, composite structures and propulsors
- Performance and Evaluation
  - RDT&E, S&T, acquisition, and ISE services
  - Measure full and model scale test articles
  - 3D measurement capabilities
  - Rough water trials to validate design loads
- Criteria and Assessment
  - RDT&E, S&T, acquisition, and ISE services
  - Develop criteria to assess naval structures
  - Use analytical simulation models to quantify lifetime structural reliability and validate measure responses
- Advanced Materials and Structures
  - RDT&E, S&T, acquisition, and ISE services for composite materials
  - Develop and evaluate composite and lightweight design and evaluations
  - Composite patch repair of cracked alloys

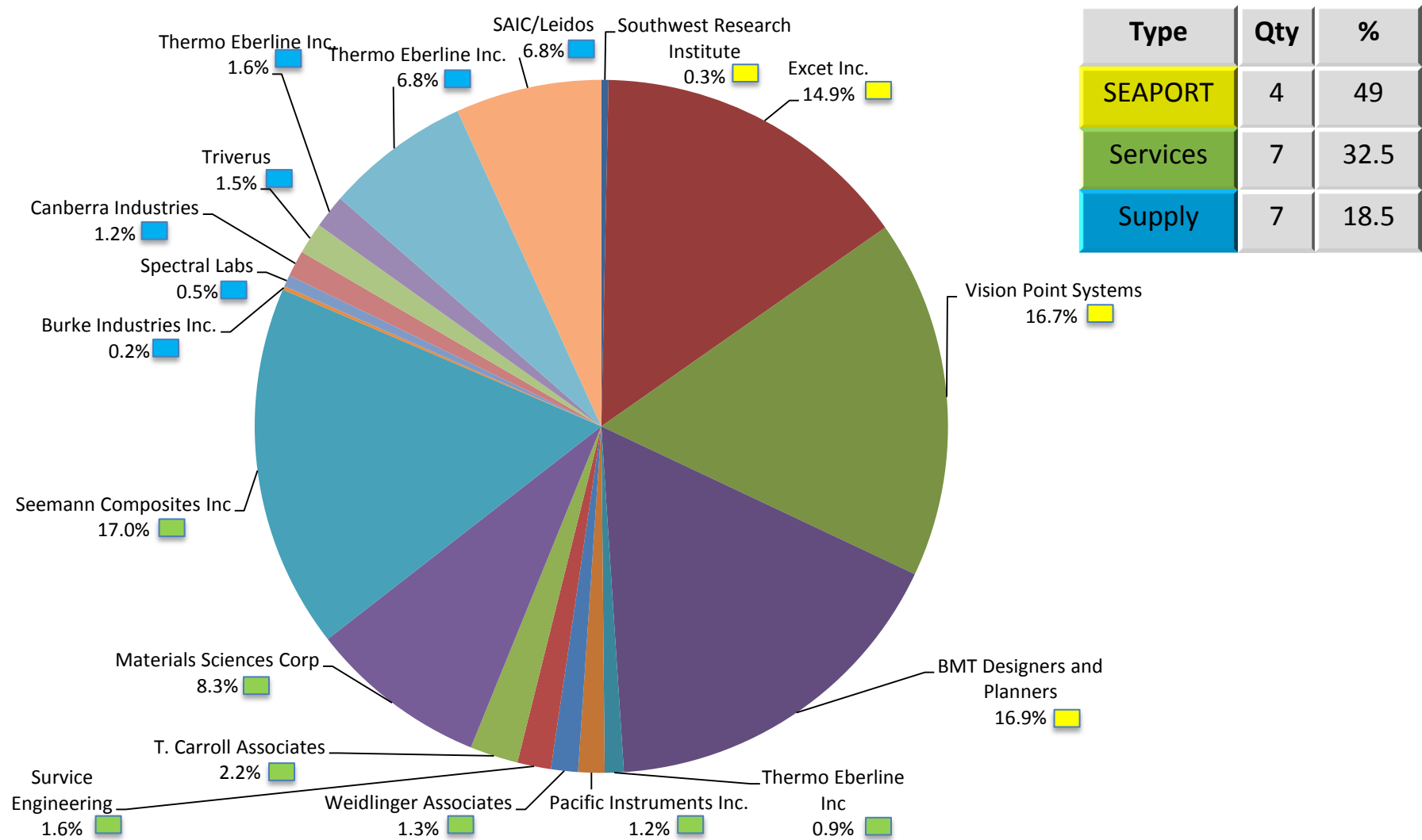


# Survivability and Weapons Effect Division (Code 66)

- Underwater Explosions R&D
  - R&D and acquisition support services
  - Improving methods and procedures for shock hardening
  - Provide advanced M&S services to predict damaging effects of UNDEX on surface and submarine hulls
- Dynamic Measurements & Testing
  - RDT&E and acquisition support services
  - Measure dynamic pressure loads of ship and submarine structures
  - Preparing for the LCS-5 and-6 Full Ship Shock trials
  - Validate analytical predictions
- Hull Response & Protection
  - RDT&E, S&T, and acquisition services
  - M&S of ships, subs, and USMC vehicles responses from weapons effects
  - Develop structure, armor, and mitigation techniques to improve survivability
- Vulnerability Assessment
  - Experts in Live Fire Test & Evaluation and Total Ship Survivability Trials
  - M&S to assess primary and secondary damage and recoverability actions
- Survivability and Weapon Effects M&S
  - R&D and eventual acquisition services
  - Developing new MS technologies for advanced weapon effect simulations



# Overview of Active Contracts



# Current Services/Supply Contracts

## Materials & Manufacturing Division (C/61)

Contract Title	Total Value	Service/ Supply	Contractor	Concludes (Qtr/FY)
U.S. Marine Corp Corrosion and Materials Engineering Services	\$49.2M	SEAPORT	Vision Point Systems	Q3/ FY21
U.S. Navy Corrosion Control Assistance Team (CCAT)	\$43.9M	SEAPORT	Excet Inc.	Q2/FY21
Non Destructive Testing and Evaluation (SBIR Phase III)	\$24.5M	Service	Materials Sciences Corp	Q3/FY20
Rubber Compound (NXAS126)	\$0.51M	Supply	Burke Industries Inc.	Q4/FY19
Fire Test & Engineering Services for Fire Safety Programs	\$0.98M	SEAPORT	Southwest Research Institute	Q2/FY17

## Environmental and Energy Division (C/63)

Contract Title	Total Value	Service/ Supply	Contractor	Concludes (Qtr/FY)
Full Spectrum Environmental Quality Systems	\$49.8M	SEAPORT	BMT Designers and Planners	Q1/FY21
Thermoluminescent Dosimeter (TLD) Equipment	\$19.9M	Supply	Thermo Eberline Inc.	Q2/FY20
8800 Reader Maintenance	\$2.6M	Service	Thermo Eberline Inc.	Q3/FY19
Air Particle Sampler	\$1.6M	Supply	Spectral Labs	Q3/FY19
Electronic Personal Dosimeter (EPD) IDIQ	\$4.6M	Supply	Thermo Eberline Inc.	Q3/FY19
Tool Contamination Monitor (Shore)	\$1.4M	Supply	Canberra Industries	Q2/FY18
Air Particle Detector (APD) Ships	\$20M	Supply	SAIC/Leidos	Q1/FY18
Air Particle Detector (APD) Shore	\$1.9M	Supply	Canberra Industries	Q4/FY17
Flight Deck Cleaning/Debris Removal Technology	\$4.3M	Supply	Triverus	Q2/FY17
Tool Contamination Monitor (Shipboard)	\$0.28M	Supply	Canberra Industries	Q4/FY16

# Current Services/Supply Contracts

## Structures and Composites Division (C/65)

Contract Title	Total Value	Service/ Supply	Contractor	Concludes (Qtr/FY)
Composite Systems for Marine Components (SBIR Phase III)	\$49.9M	Service	Seemann Composites Inc	Q3/2020

## Survivability and Weapons Effect Division (C/66)

Contract Title	Total Value	Service/ Supply	Contractor	Concludes (Qtr/FY)
Data Recording Equipment and Calibration/Repair	\$3.6M	Service	Pacific Instruments Inc.	Q2/FY20
Survivability Technical Services	\$6.6M	Service	T. Carroll Associates	Q3/FY18
Engineering Services for Software Development and Shock Assessments	\$3.7M	Service	Weidlinger Associates	Q4, FY16
Engineering Services for Advanced Survivability Assessment Program (ASAP)	\$4.6M	Service	Survive Engineering	Q4, FY16

# Projected Services/Supply Contracts

Division	Contract Title	Est. Value (\$M)	Service/Supply	Anticipated Announcement (Qtr/FY)
63	NN-Air Particle Detector	\$0.22	Supply	Q3/FY16
66	Engineering Services for Advanced Survivability Assessment Program (ASAP)	\$5.0	Service	Q3/FY16
66	Instrumentation Cable and Accelerometers in support FSST	\$2.0	Supply	Q3/FY16
61	Metallurgical Testing Services (IDIQ)	\$6.0	Service	Q4/FY16
63	High Shear Rotary Membrane System	\$0.3	Supply	Q4/FY16
63	Tritium Monitor (Hardware, Spare Parts & Training)	\$1.3	Supply	Q4/FY16
63	Radiation Air Particle Detector (APD) Ships	\$20.0	Supply	Q1/FY17
63	Wastewater Hauler Services (Annual Requirement)	\$0.1	Supply	Q1/FY17
61	Fire Test and Engineering Services for Fire Safety	\$1.0	Service	Q1/FY17
65	C-Bay Cooling Tower Replacement	\$0.3	Service	Q1/FY17
60	Engineering and Technical Services	\$10.0	Service	Q1/FY17
60	IT/IA Engineering Services	\$5.0	Service	Q1/FY17
63	Large Shipboard Incinerator Vibration & EMI Testing	\$0.2	Service	Q1/FY17
63	Commercial Solid Waste Compactors/Balers (LABEVAL)	\$0.1	Supply	Q2/FY17
66	Modeling & Simulation Engineering Services	\$3.8	Service	Q2/FY17